

Application No. 10/719,325
Response to Final Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claims 1 and 7 have been amended to clarify the feature of the present invention whereby only a single one of the left and right straight frames is connected to the blade at a center of the blade in a lengthwise direction thereof. See, for example, Figs. 1 and 7, and the disclosure in the specification at, for example, page 8, lines 3-15.

No new matter has been added, and it is respectfully requested that the amendments to claims 1 and 7 be approved and entered.

THE PRIOR ART REJECTION

Claims 1-3, 5, 7-9 and 11 were rejected under 35 USC 102 as being anticipated by one or more of JP 64-14251 (cited by the Examiner as JP 62-106405) ("Matsumoto et al"), the Applicant's Admitted Prior Art as shown in Fig. 8, JP 2546933 ("JP '933"), and USP 3,441,092 ("Drone"), and claims 2, 4, 6, 8, 10 and 12 were rejected as being obvious in view of the Applicant's Admitted Prior Art as shown in Fig. 8 and/or the combination of JP '933 and USP 3,656,558 ("Kolinger"). These rejections,

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however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as clearly recited in amended independent claims 1 and 7, only a single one of the left and right straight frames is connected to the blade at a center of the blade in a lengthwise direction thereof.

By contrast, according to the Applicant's Admitted Prior Art as shown in Figs. 8 and 9, JP '933, Drone and Kolinger, both of the left and right straight frames are connected to a center of the blade. And it is respectfully submitted that none of the Applicant's Admitted Prior Art, JP '933, Drone and Kolinger disclose, teach or even remotely suggest that only a single one of the left and right straight frames is connected to the center of the blade in the lengthwise direction thereof.

According to Matsumoto et al, moreover, the tug link 9 connects one of the blade supporting arms 5_1 and 5_2 and a portion of the blade 3 which is off-set with respect to the center of the blade. Indeed, the tug link 9 according to Matsumoto et al is attached to the blade 3 in the vicinity of one of the elevating cylinders 8_1 and 8_2 .

By contrast, according to the present invention as recited in amended independent claims 1 and 7, the single arm connects the singly one of the left and right straight frames to the blade at a center of the blade in a lengthwise direction thereof. As a

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result, the single arm of to the claimed present invention is attached to the blade in a central location with respect to the attachment points of the elevating cylinders (see Figs. 1 and 7).

And with the structure of the present invention, it is possible to use a cross joint or a ball joint to connect the single arm to the blade at joint J3C in Fig. 1. See the disclosure in the specification at page 14, lines 20-23.

By contrast, according to Matsumoto et al, the joints 15 and 13 for connecting the tug link 9 to the blade 3 and blade supporting arm 5₂ must both be ball joints, which are more expensive than cross joints. See page 6, lines 4-11 of the translation of Matsumoto et al.

In addition, as shown in the attached Reference Fig. A (corresponding to Fig. 1 of Matsumoto et al), the angle θ between the tug link 9 and the blade supporting arm 5₂ is relatively small, since the tug link 9 is connected to the blade 3 at a position which is off-set to the far side of the center of the blade, with respect to blade supporting arm 5₂. Accordingly, there is only a relatively small clearance x between the tug link 9 and the vehicle body 2. And therefore, the distance between the blade 3 and the vehicle body 2 in Matsumoto et al must be large to prevent interference between the tug link 9 and the vehicle body 2.

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By contrast, according to the present invention, θ is increased as compared to Matsumoto et al by connecting the single arm to the blade at the center of the blade in the lengthwise direction thereof, and the clearance between the single arm and the vehicle main body is correspondingly increased. Thus, the interference between the single arm and the vehicle main body is reduced, thereby allowing the blade according to the present invention to be positioned closer to the vehicle main body.

However, as the angle θ increases, the stress on the joint of the single arm and the straight frame also increases. Therefore, the single arm of the present invention is connected to the center of the blade in consideration of the trade-offs between the distance between the blade and the vehicle main body, and the increase in stress on the joint of the single arm.

Thus, according to the claimed present invention, the single arm advantageously connects only a single one of the left and right straight frames to the blade at the center of the blade in a lengthwise direction thereof.

And it is respectfully submitted that Matsumoto et al does not disclose, teach or suggest this feature of the present invention as recited in amended independent claims 1 and 7.

Accordingly, it is respectfully submitted that the present invention as recited in amended independent claims 1 and 7, as well as claims 2-6 and 8-12 respectively depending therefrom,

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clearly patentably distinguishes over Matsumoto et al, the Applicant's Admitted Prior Art, JP '933, Drone and Kolinger, taken singly or in any combination, under 35 USC 102 as well as under 35 USC 103.

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In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,


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